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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,337	12/29/2003	Mark H. Tuszynski	041673-2115	9488

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FOLEY & LARDNER
P.O. BOX 80278
SAN DIEGO, CA 92138-0278

EXAMINER	
LIETO, LOUIS D	

ART UNIT	PAPER NUMBER
1632	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/748,337	TUSZYNSKI, MARK H.	
	Examiner	Art Unit	
	Louis D. Lieto	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,11,12 and 14-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,11,12 and 14-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's response filed on 7/19/2005 is acknowledged. Claims 1-8, 11-12 and 14-18 are pending in the instant application. Applicant canceled claim 9,10, and 13, and amended claims 1, 12 and 17 and add new claim 18. The sections of title 35 U.S.C not included in this office action can be found in a previous office action. An action on the merits follows.

Information Disclosure Statement

The references submitted with the reply have been considered, but will not be listed on any patent resulting from this application because they were not provided on a separate list in compliance with 37 CFR 1.98(a)(1). In order to have the references printed on such resulting patent, a separate listing, preferably on a PTO/SB/08A and 08B form, must be filed within the set period for reply to this Office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8, 11-12 and 14-18 are newly rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims have been amended so that they now contain subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original disclosure fails to

recite the limitation of two or more delivery sites. Applicants have not indicated where in the specification support for this new limitation can be found. Further, a key word search of the specification fails to find disclosure of this limitation anywhere in the specification as initially filed. Therefore, since the specification as filed doe not contain support for the term transducing peptide two or more delivery sites, it is considered to be new matter. See M.P.E.P. 608.04(a). Applicant is required to cancel the new matter. This new rejection is necessitated by applicant's amendment to the claims.

The rejection of claims 1-8, 11-12 and 14-18 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn in view of applicant's arguments and amendments.

The rejection of claims 1-8, 11-12 and 14-18 under 35 U.S.C. 112, first paragraph is maintained in part, because the specification, while being enabling for delivery of an adeno-associated viral vector expressing therapeutic neurotrophin intraparenchymally to the mammalian brain to regenerate neurons, does not reasonably provide enablement for a method for delivering any neurotrophin composition comprising a transgene encoding any neurotrophin via various administration routes into one or more sites within the targeted region of a mammalian brain. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The rejection is withdrawn over canceled claims 9,10, and 13.

Response to Arguments

Applicant's arguments filed 5/03/2005 have been fully considered but they are not fully persuasive. Applicant's arguments, amendments to the claims and the declaration of Mark Tuszynski were partially persuasive. In view of this the enabled scope has been broadened to include *in vivo* delivery of an adeno-associated viral vector expressing a therapeutic neurotrophin. However, applicant did not provide any arguments or evidence traversing the previous issues of rejection based on the unpredictability of methods of gene therapy, or site of delivery. See pages 5 and 6 of the office action of 1/19/2005.

Claims 17 and 18 are newly rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This new grounds of rejection is required because of applicant's amendment to claim 17 and the addition of new claim 18.

Claims 17 and 18 are specifically drawn to the treatment of Alzheimer's disease and Parkinson's disease in the human. However applicant has not disclosed any evidence in the specification that the claimed method can be used to treat these diseases in the human. The declaration of Mark Tuszynski discloses the effects of using the claimed method in animal models of Alzheimer's disease and Parkinson's disease, and indicates that adeno-associated viral vectors have been used to deliver neurotrophins into the brains of humans. However, no evidence is disclosed if the humans used in said experiments had Alzheimer's disease or Parkinson's

disease, what specific adeno-associated viral vectors encoded neurotrophins were delivered and if the humans were so afflicted what the efficacy of the treatment was. While the animal models used may have been the best available in the art at the time of invention, it is noted that neither the specification nor the art of record indicates that these models were predicative of the efficacy of a gene therapy treatment method for Alzheimer's disease or Parkinson's disease in humans. See also pages 5 and 6 of the office action of 1/19/2005. Applicant has not provided sufficient evidence to enable the skilled practitioner in the art to predict how to practice the claimed invention as a method of treatment for Alzheimer's disease or Parkinson's disease in humans, without undue and extensive experimentation.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The rejection of claims 1-17 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn in view of applicant's amendment to claim 1 and cancellation of claims 9 and 10.

Double Patenting

The rejection of claims 1-17 under 35 U.S.C. 101 as claiming the same invention as that of claims 1-17 of prior U.S. Patent No. 6,683,058 is withdrawn in view of applicant's amendment to the claims. However, this withdrawal is based on applicant's addition of new matter to the claims. Upon withdrawal of the new matter the rejection will be reinstated.

Applicant should note that the original rejection was a statutory type (35 U.S.C. 101) double patenting rejection. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1, 11, 12 and 13-15 remain rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2,3, 4 and 5, of U.S. Patent No. 6,451,306. Applicant has not traversed this rejection, filed a terminal disclaimer, nor indicated how any amendments to the claims overcome this rejection. Therefore it is presumed that applicant has acquiesced to this rejection and it is maintained for reasons of record as set forth in the prior office action.

Claim Rejections - 35 USC § 102

Claims 1 and 2 remain rejected under 35 U.S.C. 102(b) as being anticipated by Martinez-Serrano et al. { Martinez-Serrano et al. (1995) J. Neuroscience 15:5668-5680}.

Martinez-Serrano et al. provides guidance on a method of administering a therapeutic neurotrophin composition, comprising a neural progenitor cell line transfected with a MMLV retrovirus encoding a mouse NGF cDNA into the brain of a rodent in more than one location (pgs. 5669-5671). Martinez-Serrano et al. teaches delivering the neural progenitor cell line to two locations no more than about 10mm apart (pg. 5670, Materials and Methods). Further, Martinez-Serrano et al. teaches that the engrafted cells blocked over 90% of the cholinergic cell loss in fimbria-fornix induced lesions (Abstract; pg 5677, Figure 6; pg. 5678, Figure 8). The engrafted cells migrated for a distance of 1-1.5 mm from the implantation sites (Abstract; pg 5674, col. 1,

pgph 3) and expressed NGF (pg. 5674, col. 2, pgph 1). Finally, Martinez-Serrano et al. teaches that the cells expressed a transgene encoded NGF within 500 um of a target cell (pg 5675, Figure 4; pg 5676, Figure 5). Thus, by teaching all the limitations of the claims as written, Martinez-Serrano et al. anticipates the instant invention as claimed.

Applicant has not traversed this rejection, nor indicated how any amendments to the claims overcome this rejection. Therefore it is presumed that applicant has acquiesced to this rejection.

The rejection of claims 1 and 16 under 35 U.S.C. 102(b) as being anticipated by Schinstine et al. {Schinstine et al. (1995) Cell Transplant 4:93-102} is withdrawn in view of applicant's amendment to the claims. However, this withdrawal is based on applicant's addition of new matter to the claims. Upon withdrawal of the new matter the rejection will be reinstated.

No claims allowed.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Lou Lieto whose telephone number is (571) 272-2932. The examiner can normally be reached on Monday-Friday, 9am-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Patent applicants with problems or questions regarding electronic images that can be viewed in the PAIR can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6

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For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Dr. Louis D. Lieto
Patent Examiner
Art Unit 1632

Deborah Crouch

DEBORAH CROUCH
PRIMARY EXAMINER
GROUP 1800/1630